



# Switch Engine™ Feature Support Matrix

For Switch Engine Version 32.6.1

9037926-00 Rev AB  
January 2024



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# About this Document

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- [Purpose of this Document](#) on page 4
- [Documentation and Training](#) on page 4
- [Help and Support](#) on page 5
- [Send Feedback](#) on page 6

The topics in this section discuss the purpose of this document, the conventions used, ways to provide feedback, additional help, and information regarding other Extreme Networks publications.

## Purpose of this Document

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This document provides information on features in Extreme Networks Switch Engine™. Features are listed alphabetically with associated protocols and standards, such as RFCs and IEEE. This release of Switch Engine runs on the following product families:

- 5320 Series
- 5420 Series
- 5520 Series
- 5720 Series
- 7520 Series
- 7720 Series



### Note

Prior to Switch Engine 31.6, 5520 Series and 5420 Series platforms ran EXOS. EXOS support ends for these platforms with EXOS 31.6.

## Documentation and Training

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Find Extreme Networks product information at the following locations:

- [Current Product Documentation](#)
- [Release Notes](#)
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- [Extreme Optics Compatibility](#)
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### Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

### The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

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For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2800. For the support phone number in your country, visit [www.extremenetworks.com/support/contact](http://www.extremenetworks.com/support/contact).

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

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4. Select **Subscribe**.
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- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information.
- Broken links or usability issues.

To send feedback, email us at [documentation@extremenetworks.com](mailto:documentation@extremenetworks.com).

Provide as much detail as possible including the publication title, topic heading, and page number (if applicable), along with your comments and suggestions for improvement.



## Features A to C

**Table 1: Access Control Lists (ACL)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Layer 2/3/4 ACLs                                       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RPF (Unicast Reverse Path Forwarding) Control via ACLs | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Wire-speed ACLs  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 1: Access Control Lists (ACL) (continued)**

| Feature                       | Product     | Release introduced |
|-------------------------------|-------------|--------------------|
| Rate Limiting/Shaping by ACLs | 5320 Series | Switch Engine 31.6 |
|                               | 5420 Series | EXOS 31.3          |
|                               | 5520 Series | EXOS 31.1          |
|                               | 5720 Series | Switch Engine 32.1 |
|                               | 7520 Series | Switch Engine 32.4 |
|                               | 7720 Series | Switch Engine 32.4 |

**Table 2: Ethernet Audio Video Bridging (AVB)**

| Feature                  | Product     | Release introduced |
|--------------------------|-------------|--------------------|
| IEEE 802.1 AVB standards | 5320 Series | Switch Engine 31.6 |
|                          | 5420 Series | EXOS 31.3          |
|                          | 5520 Series | EXOS 31.1          |
|                          | 5720 Series | Switch Engine 32.2 |
|                          | 7520 Series | Not supported      |
|                          | 7720 Series | Not supported      |

**Table 3: Auto-Discovery on Universal platforms**

| Feature                               | Product     | Release introduced |
|---------------------------------------|-------------|--------------------|
| Auto-Discovery on Universal platforms | 5320 Series | Switch Engine 31.6 |
|                                       | 5420 Series | EXOS 31.3          |
|                                       | 5520 Series | EXOS 31.1          |
|                                       | 5720 Series | Switch Engine 32.1 |
|                                       | 7520 Series | Not supported      |
|                                       | 7720 Series | Not supported      |

**Table 4: Bidirectional Forwarding Detection (BFD)**

| Feature                       | Product     | Release introduced |
|-------------------------------|-------------|--------------------|
| draft-ietf-bfd-mib-14 BFD MIB | 5320 Series | Switch Engine 31.6 |
|                               | 5420 Series | EXOS 31.3          |
|                               | 5520 Series | EXOS 31.1          |
|                               | 5720 Series | Switch Engine 32.1 |
|                               | 7520 Series | Switch Engine 32.4 |
|                               | 7720 Series | Switch Engine 32.4 |



**Table 4: Bidirectional Forwarding Detection (BFD) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| draft-ietf-bfd-tc-mib-02<br>Definitions of Textual<br>Conventions (TCs) for BFD<br>Management | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 5: Border Gateway Protocol (BGP)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Draft-ietf-idr-bgp4-<br>mibv2-02.txt – Enhanced<br>BGP-4 MIB | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1745 BGP4/IDRP for IP-<br>OSPF Interaction               | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1997 BGP<br>Communities Attribute                        | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2439 BGP Route Flap<br>Damping                           | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 5: Border Gateway Protocol (BGP) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 2545 Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2858 Multiprotocol Extensions for BGP-4 (Obsoletes RFC 2283)             | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2918 Route Refresh Capability for BGP-4                                  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 3107 Carrying Label Information in BGP-4                                 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 4271 A Border Gateway Protocol 4 (BGP-4) (Obsoletes RFC 1771)            | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 5: Border Gateway Protocol (BGP) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 4273 Definitions of Managed Objects for the Fourth Version of the Border Gateway Protocol (BGP-4) using SMIv2 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4360 BGP Extended Communities Attribute   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4456 BGP Route Reflection: An alternative to full mesh internal BGP (Obsoletes RFC 1966)                      | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4486 Subcodes for BGP Cease Notification message  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4724 Graceful Restart Mechanism for BGP   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 5: Border Gateway Protocol (BGP) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 4760 Multiprotocol extensions for BGP-4                          | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 5065 Autonomous System Confederations for BGP                    | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 5396 Textual Representation of Autonomous System (AS) Attributes | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 5492 Capabilities Advertisement with BGP-4                       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 6793 BGP Support for Four-octet AS Number Space                  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 6: Bootstrap Protocol (BOOTP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 6: Bootstrap Protocol (BOOTP) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 951, 1542 BootP                             | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2131 BOOTP/DHCP relay agent and DHCP server | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 951, 1542 BootP                             | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 7: Cisco Discovery Protocol (CDP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| CDP v1  | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 7: Cisco Discovery Protocol (CDP) (continued)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| CDP v2  | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 8: Configuration auto-save**

| Feature                 | Product     | Release introduced |
|-------------------------|-------------|--------------------|
| Configuration auto-save | 5320 Series | Switch Engine 31.6 |
|                         | 5420 Series | EXOS 31.3          |
|                         | 5520 Series | EXOS 31.1          |
|                         | 5720 Series | Switch Engine 32.1 |
|                         | 7520 Series | Switch Engine 32.4 |
|                         | 7720 Series | Switch Engine 32.4 |

**Table 9: CLEAR-Flow**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| CLEAR-Flow, threshold-based alerts and actions | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |



## Features D to F

**Table 10: Data Center**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Data Center Bridging eXchange (DCBX) (IEEE P802.1Qaz/D2.3) | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 11: Direct Attach**

| Feature                       | Product     | Release introduced |
|-------------------------------|-------------|--------------------|
| Direct Attach (IEEE 802 VEPA) | 5320 Series | Switch Engine 31.6 |
|                               | 5420 Series | EXOS 31.3          |
|                               | 5520 Series | EXOS 31.1          |
|                               | 5720 Series | Switch Engine 32.1 |
|                               | 7520 Series | Switch Engine 32.4 |
|                               | 7720 Series | Switch Engine 32.4 |

**Table 12: Ethernet Automatic Protection Switching (EAPS)**

| Feature                         | Product     | Release introduced |
|---------------------------------|-------------|--------------------|
| EAPS MIB supports get functions | 5320 Series | Switch Engine 31.6 |
|                                 | 5420 Series | EXOS 31.3          |
|                                 | 5520 Series | EXOS 31.1          |
|                                 | 5720 Series | Switch Engine 32.1 |
|                                 | 7520 Series | Switch Engine 32.4 |
|                                 | 7720 Series | Switch Engine 32.4 |

**Table 12: Ethernet Automatic Protection Switching (EAPS) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| EAPS multiple rings   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| EAPSV2 Shared ports   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3619 Ethernet Automatic Protection Switching (EAPS) Version 1 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 13: Extreme Discover Protocol (EDP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| EDP     | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 14: Extreme Link State Monitoring (ELSM)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |



**Table 14: Extreme Link State Monitoring (ELSM) (continued)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| ELSM    | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 15: Extreme Loop Recovery Protocol (ELRP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| ELRP    | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 16: Extreme Standby Router Protocol (ESRP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| ESRP    | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 17: Equal Cost Multi Paths (ECMP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 17: Equal Cost Multi Paths (ECMP) (continued)**

| Feature     | Product     | Release introduced |
|-------------|-------------|--------------------|
| Static ECMP | 5420 Series | EXOS 31.3          |
|             | 5520 Series | EXOS 31.1          |
|             | 5720 Series | Switch Engine 32.1 |
|             | 7520 Series | Switch Engine 32.4 |
|             | 7720 Series | Switch Engine 32.4 |

**Table 18: Extended Edge Switching (VPEX)**

| Feature                                | Product     | Release introduced                    |
|--|-------------|---------------------------------------|
| Extended Edge Switching Control Bridge | 5320 Series | Not supported                         |
|  | 5420 Series | EXOS 31.3                             |
|  | 5520 Series | EXOS 31.1                             |
|  | 5720 Series | Not supported                         |
|  | 7520 Series | Switch Engine 32.6.1<br>7520-48Y only |
|  | 7720 Series | Not supported                         |

**Table 19: Fabric Attach**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Fabric Attach (interoperable with Extreme Fabric Connect) | 5320 Series | EXOS 31.6          |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 20: Flow Monitor**

| Feature      | Product     | Release introduced |
|--------------|-------------|--------------------|
| Flow Monitor | 5320 Series | Not applicable     |
|              | 5420 Series | Switch Engine 32.2 |
|              | 5520 Series | Switch Engine 32.2 |
|              | 5720 Series | Switch Engine 32.4 |
|              | 7520 Series | Not applicable     |
|              | 7720 Series | Not applicable     |



## Features G to I

**Table 21: Extreme Integrated Application Hosting (IAH)**

| Feature                                      | Product     | Release introduced |
|--|-------------|--------------------|
| Extreme Integrated Application Hosting (IAH) | 5320 Series | Not supported      |
|  | 5420 Series | Not supported      |
|  | 5520 Series | Not supported      |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.5 |

**Table 22: Internet Control Message Protocol (ICMP)**

| Feature                             | Product     | Release introduced |
|-------------------------------------|-------------|--------------------|
| ICMP and IP-Option Response Control | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| RFC 792 ICMP                        | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |

**Table 22: Internet Control Message Protocol (ICMP) (continued)**

| Feature                                    | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 1256 IPv4 ICMP Router Discovery (IRDP) | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 23: Internet Group Management Protocol (IGMP)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IGMP v1/v2 Snooping with Configurable Router Registration Forwarding | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IGMP v3 Snooping with Configurable Router Registration Forwarding    | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IGMP Filters   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1112 IGMP v1   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 23: Internet Group Management Protocol (IGMP) (continued)**

| Feature                                    | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 2236 IGMP v2                           | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 3376 IGMP v3                           | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2933 IGMP MIB                          | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1256 IPv4 ICMP Router Discovery (IRDP) | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Static IGMP Membership                     | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 24: IP Security**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 24: IP Security (continued)**

| Feature   | Product            | Release introduced |
|---|--------------------|--------------------|
| IP Security – DHCP enforcement via Disable ARP Learning     | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
|   | 7720 Series        | Switch Engine 32.4 |
| IP Security – DHCP Secured ARP/ARP Validation               | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
| IP Security – Gratuitous ARP Protection                     | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
| IP Security – RFC 3046 DHCP Option 82 with port and VLAN ID | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
| IP Security – Trusted DHCP Server                           | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
| 7720 Series   | Switch Engine 32.4 |                    |

**Table 25: Internet Protocol, Version 4 (IPv4) Host Services**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Not supported      |

**Table 25: Internet Protocol, Version 4 (IPv4) Host Services (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IPv4 Network Address Translation   | 5420 Series | Not supported      |
|  | 5520 Series | Not supported      |
|  | 5720 Series | Not supported      |
|  | 7520 Series | Switch Engine 32.5 |
|  | 7720 Series | Switch Engine 32.5 |
| Mrinfo, the multicast router information tool based on Appendix-B of draft-ietf-idmr-dvmrp-v3-11 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
| Multicast VLAN Registration (MVR)  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
| RFC 768 User Datagram Protocol (UDP)   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
| RFC 791 Internet Protocol (IP)   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 25: Internet Protocol, Version 4 (IPv4) Host Services (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 793 Transmission Control Protocol (TCP)                     | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 826 Address Resolution Protocol (ARP)                       | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 894 IP over Ethernet  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 1027 Proxy ARP  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 1122 Requirements for internal hosts – Communication Layers | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |



**Table 25: Internet Protocol, Version 4 (IPv4) Host Services (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 1812 Requirements for IP Version 4 Routers              | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2068 HTTP server  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2096 IPv4 Forwarding Table MIB                          | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3021 Using 31-Bit Prefixes on IPv4 Point-to-Point Links | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3587, Global Unicast Address Format                     | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 25: Internet Protocol, Version 4 (IPv4) Host Services (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 4632 An architecture for IP Address allocation with CIDR | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Static Multicast Routes                                      | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Static Unicast Routes  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 26: Internet Protocol, Version 6 (IPv6) Host Services**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Ping over IPv6 transport   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1981, Path MTU Discovery for IPv6, August 1996 – Host Requirements | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 26: Internet Protocol, Version 6 (IPv6) Host Services (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 2460, Internet Protocol, Version 6 (IPv6) Specification                     | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2462, IPv6 Stateless Address Auto configuration – Host Requirements         | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2463, Internet Control Message Protocol (ICMPv6) for the IPv6 Specification | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2464, Transmission of IPv6 Packets over Ethernet Networks                   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2465, IPv6 MIB, General Group and Textual Conventions                       | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 26: Internet Protocol, Version 6 (IPv6) Host Services (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 2466, MIB for ICMPv6  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3484, Default Address Selection for IPv6                              | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3513, Internet Protocol Version 6 (IPv6) Addressing Architecture      | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4193, Unique Local IPv6 Unicast Addresses                             | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4293, Management Information Base for the Internet Protocol (partial) | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 26: Internet Protocol, Version 6 (IPv6) Host Services (continued)**

| Feature                                | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 4861, Neighbor Discovery for IPv6  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 5095, IPv6 Specification           | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 5722, Handling of Overlapping IPv6 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
| SSH-2 server over IPv6 transport       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Telnet server over IPv6 transport      | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 26: Internet Protocol, Version 6 (IPv6) Host Services (continued)**

| Feature                        | Product     | Release introduced |
|--------------------------------|-------------|--------------------|
| Traceroute over IPv6 transport | 5320 Series | Switch Engine 31.6 |
|                                | 5420 Series | EXOS 31.3          |
|                                | 5520 Series | EXOS 31.1          |
|                                | 5720 Series | Switch Engine 32.1 |
|                                | 7520 Series | Switch Engine 32.4 |
|                                | 7720 Series | Switch Engine 32.4 |

**Table 27: IPv6 Interworking and Migration**

| Feature                      | Product     | Release introduced |
|------------------------------|-------------|--------------------|
| RFC 2893, Configured Tunnels | 5320 Series | Switch Engine 31.6 |
|                              | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |
| RFC 3056, 6to4               | 5320 Series | Switch Engine 31.6 |
|                              | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |

**Table 28: IPv6 Router Services**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| draft-ietf-vrrp-unified-mib-08.txt - Definitions of Managed Objects for VRRPv3 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |

**Table 28: IPv6 Router Services (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 1981, Path MTU Discovery for IPv6, August 1996 – Router Requirements  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2080, RIPng   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2462, IPv6 Stateless Address Auto Configuration – Router Requirements | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2740 OSPFv3, OSPF for IPv6  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4291, IP Version 6 Addressing Architecture                            | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 28: IPv6 Router Services (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 4443, Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 4862, IPv6 Stateless Address Autoconfiguration  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 5798 Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6                                | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
| RFC 6106, IPv6 Router Advertisement Options for DNS Configuration   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 6164, Using 127-Bit IPv6 Prefixes on Inter-Router Links   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |



**Table 28: IPv6 Router Services (continued)**

| Feature                         | Product     | Release introduced |
|---------------------------------|-------------|--------------------|
| RFC 7166 Authentication Trailer | 5320 Series | Switch Engine 31.6 |
|                                 | 5420 Series | EXOS 31.3          |
|                                 | 5520 Series | EXOS 31.1          |
|                                 | 5720 Series | Switch Engine 32.1 |
|                                 | 7520 Series | Switch Engine 32.4 |
|                                 | 7720 Series | Switch Engine 32.4 |
| Static Unicast routes for IPv6  | 5320 Series | Switch Engine 31.6 |
|                                 | 5420 Series | EXOS 31.3          |
|                                 | 5520 Series | EXOS 31.1          |
|                                 | 5720 Series | Switch Engine 32.1 |
|                                 | 7520 Series | Switch Engine 32.4 |
|                                 | 7720 Series | Switch Engine 32.4 |

**Table 29: Intermediate System to Intermediate System (IS-IS)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Draft-ietf-isis-ipv6-06 Routing IPv6 with IS-IS                           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Draft-ietf-isis-restart-02 Restart Signaling for IS-IS                    | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Draft-ietf-isis-wg-multi-topology-11 Multi Topology (MT) Routing in IS-IS | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 29: Intermediate System to Intermediate System (IS-IS) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| IOS 10589 OSI IS-IS Intra-Domain Routing Protocol (RFC 1142)                                  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 1195 Use of OSI IS-IS for Routing in TCP/IP and Dual Environments (TCP/IP transport only) | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2763 Dynamic Hostname Exchange Mechanism for IS-IS  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS                                 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2973 IS-IS Mesh Groups  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 29: Intermediate System to Intermediate System (IS-IS) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 3373 Three-way Handshake for IS-IS Point-to-Point Adjacencies | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |



## Features J to L

**Table 30: Keychain Manager**

| Feature          | Product     | Release introduced |
|------------------|-------------|--------------------|
| Keychain Manager | 5320 Series | Switch Engine 31.6 |
|                  | 5420 Series | EXOS 31.3          |
|                  | 5520 Series | EXOS 31.1          |
|                  | 5720 Series | Switch Engine 32.1 |
|                  | 7520 Series | Switch Engine 32.4 |
|                  | 7720 Series | Switch Engine 32.4 |

**Table 31: Layer 3 Virtual Private Networks (VPN)**

| Feature  | Product     | Release introduced                                     |
|--|-------------|--|
| RFC 4364 BGP/MPLS IP Virtual Private Networks (VPNs) | 5320 Series | Not Supported  |
|  | 5420 Series | Not Supported  |
|  | 5520 Series | EXOS 31.1<br>Full except for section 9 and 10          |
|  | 5720 Series | Not Supported  |
|  | 7520 Series | Switch Engine 32.5<br>Full except for section 9 and 10 |
|  | 7720 Series | Switch Engine 32.5<br>Full except for section 9 and 10 |

**Table 31: Layer 3 Virtual Private Networks (VPN) (continued)**

| Feature                           | Product     | Release introduced  |
|-----------------------------------|-------------|---|
| RFC 4382 MPLS/BGP Layer 3 VPN MIB | 5320 Series | Not Supported   |
|                                   | 5420 Series | Not Supported   |
|                                   | 5520 Series | EXOS 31.1<br>Full except for 1 table:<br>mplsL3VpnVrfSecTable |
|                                   | 5720 Series | Not Supported   |
|                                   | 7520 Series | Not Supported   |
|                                   | 7720 Series | Not Supported   |

**Table 32: Licensing**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Ability to extend the Factory Default Premier Trial License | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| License files signed using Extreme Networks signature.      | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Universal Hardware licenses                                 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 33: Link Aggregation Control Protocol (LACP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 33: Link Aggregation Control Protocol (LACP) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| IEEE 802.1AX-2008 Link Aggregation  | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| IEEE 802.3ad Static load sharing configuration and LACP based dynamic configuration | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
| LACP  | 7720 Series | Switch Engine 32.4 |
|   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |

**Table 34: Link Layer Discovery Protocol (LLDP)**

| Feature             | Product     | Release introduced |
|---------------------|-------------|--------------------|
| IEEE 802.1AB – LLDP | 5320 Series | Switch Engine 31.6 |
|                     | 5420 Series | EXOS 31.3          |
|                     | 5520 Series | EXOS 31.1          |
|                     | 5720 Series | Switch Engine 32.1 |
|                     | 7520 Series | Switch Engine 32.4 |
|                     | 7720 Series | Switch Engine 32.4 |

**Table 34: Link Layer Discovery Protocol (LLDP) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| LLDP Media Endpoint Discovery (LLDP-MED), ANSI/TIA-1057, draft 08 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 35: Linux kernel version**

| Feature              | Product     | Release introduced           |
|----------------------|-------------|------------------------------|
| Linux kernel version | 5320 Series | 5.4 as of Switch Engine 32.1 |
|                      | 5420 Series | 5.4 as of Switch Engine 32.1 |
|                      | 5520 Series | 5.4 as of Switch Engine 32.1 |
|                      | 5720 Series | 5.4 as of Switch Engine 32.1 |
|                      | 7520 Series | 5.4 as of Switch Engine 32.4 |
|                      | 7720 Series | 5.4 as of Switch Engine 32.4 |



## Features M to O

**Table 36: MACsec**

| Feature                             | Product     | Release introduced           |
|-------------------------------------|-------------|------------------------------|
| IEEE 802.1AE MACsec Link Encryption | 5320 Series | Switch Engine 31.6           |
|                                     | 5420 Series | EXOS 31.4                    |
|                                     | 5520 Series | EXOS 31.1                    |
|                                     | 5720 Series | Switch Engine 32.1           |
|                                     | 7520 Series | 32.6.1<br>7520-48YE-8CE only |
|                                     | 7720 Series | Not supported                |
| LRM/MACsec Adapter                  | 5320 Series | Switch Engine 31.6           |
|                                     | 5420 Series | EXOS 31.4                    |
|                                     | 5520 Series | EXOS 31.1                    |
|                                     | 5720 Series | Switch Engine 32.1           |
|                                     | 7520 Series | Not supported                |
|                                     | 7720 Series | Not supported                |
| MAC Security – Lockdown and Limit   | 5320 Series | Switch Engine 31.6           |
|                                     | 5420 Series | EXOS 31.4                    |
|                                     | 5520 Series | EXOS 31.1                    |
|                                     | 5720 Series | Switch Engine 32.1           |
|                                     | 7520 Series | 32.6.1<br>7520-48YE-8CE only |
|                                     | 7720 Series | Not supported                |



**Table 36: MACsec (continued)**

| Feature              | Product     | Release introduced           |
|----------------------|-------------|------------------------------|
| MACsec Key Agreement | 5320 Series | Switch Engine 31.6           |
|                      | 5420 Series | EXOS 31.4                    |
|                      | 5520 Series | EXOS 31.1                    |
|                      | 5720 Series | Switch Engine 32.1           |
|                      | 7520 Series | 32.6.1<br>7520-48YE-8CE only |
|                      | 7720 Series | Not supported                |

**Table 37: Management and traffic analysis**

| Feature                             | Product     | Release introduced |
|-------------------------------------|-------------|--------------------|
| Application Telemetry               | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| Configuration logging               | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| draft-ietf-hubmib-mau-mib-v3-02.txt | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-MAC-LOCKING               | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature                              | Product     | Release introduced |
|--------------------------------------|-------------|--------------------|
| ENTERASYS-POLICY-PROFILE-MIB         | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-UPN-TC-MIB                 | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-CLASS-OF-SERVICE-MIB       | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-RADIUS-ACCT-CLIENT-EXT-MIB | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-RADIUS-AUTH-CLIENT-MIB     | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| ENTERASYS-MULTI-AUTH-MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-MAC-AUTHENTICATION-MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-MULTI-USER-8021X-MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| ENTERASYS-VLAN-AUTHORIZATION-MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Extreme Networks vendor MIBs (includes statistics, FDB, PoE, CPU, Memory, ACL, CLEAR-Flow etc MIBs) | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| IEEE 802.1AB LLDP Basic MIB, LLDP-EXT-DOT1-MIB, LLDP-EXT-DOT3-MIB | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| IEEE-8021-PAE-MIB   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| IEEE802.1 Q BRIDGE MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| IEEE-8021x-EXTENSIONS-MIB   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| IP Route Compression  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Multiple Images, Multiple Configs                                | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| PIM MIB draft-ietf-pim-mib-v2-01.txt                             | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 854 Telnet client and server                                 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1155 Structure of Management Information (SMIv1)             | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1212, RFC 1213, RFC 1215 MIB-II, Ethernet-Like MIB and TRAPs | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature                             | Product     | Release introduced |
|-------------------------------------|-------------|--------------------|
| RFC 1350 TFTP Protocol (revision 2) | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| RFC 1493 Bridge MIB                 | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| RFC 1591 DNS (client operation)     | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| RFC 1573 Evolution of Interface     | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| RFC 1643 Ethernet MIB               | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 1757 RMON 4 groups: Stats, History, Alarms and Events | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2021 RMON2 (probe configuration)                      | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2233 Interface MIB                                    | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2578 – 2580 SMIV2 (update to RFC 1902 – 1903)         | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2613 SMON MIB   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 2665 – Definitions of Managed Objects for the Ethernet-like Interface types   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2668 802.3 Medium Attachment Units (MAU) MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2925 Ping/Traceroute MIB  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3014 Notification Log MIB   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3315, Dynamic Host Configuration Protocol for IPV6 (DHCPv6), Client and Relay Function(Secondary IP address only) support | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |



**Table 37: Management and traffic analysis (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 3917 IPFIX   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC4805 - Managed Objects for DS1, J1, E1, DS2 and E2 interfaces | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 6933 Entity MIB v4   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Secure FTP (SFTP) server   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| SFF-8472 DDMI (Digital Diagnostics Monitoring Interface)         | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 37: Management and traffic analysis (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| sFlow version 5   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Web-based device management interface – ExtremeXOS Chalet | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| XML APIs over Telnet/SSH and HTTP/HTTPS                   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 38: Message Session Relay Protocol (MSRP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| MSRP    | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 39: Multi-Switch Link Aggregation Groups (MLAG)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 39: Multi-Switch Link Aggregation Groups (MLAG) (continued)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| MLAG    | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 40: Multi-User, Multi-method authentication and policy**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Multi-User, Multi-method authentication and policy | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 41: MultiProtocol Label Switching (MPLS)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 2961 RSVP Refresh Overhead Reduction Extensions | 5320 Series | Not supported      |
|   | 5420 Series | Not supported      |
|   | 5520 Series | EXOS 31.6          |
|   | 5720 Series | Not supported      |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |
| RFC 3031 Multiprotocol Label Switching Architecture | 5320 Series | Not supported      |
|   | 5420 Series | Not supported      |
|   | 5520 Series | EXOS 31.6          |
|   | 5720 Series | Not supported      |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |

**Table 41: MultiProtocol Label Switching (MPLS) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 3032 MPLS Label Stack Encoding   | 5320 Series | Not supported      |
|  | 5420 Series | Not supported      |
|  | 5520 Series | EXOS 31.6          |
|  | 5720 Series | Not supported      |
|  | 7520 Series | Switch Engine 32.5 |
|  | 7720 Series | Switch Engine 32.5 |
| RFC 3811 Definitions of Textual Conventions (TCs) for MPLS Management                  | 5320 Series | Not supported      |
|  | 5420 Series | Not supported      |
|  | 5520 Series | EXOS 31.6          |
|  | 5720 Series | Not supported      |
|  | 7520 Series | Switch Engine 32.5 |
|  | 7720 Series | Switch Engine 32.5 |
| RFC 3812 MPLS Traffic Engineering (TE) Management Information Base (MIB)               | 5320 Series | Not supported      |
|  | 5420 Series | Not supported      |
|  | 5520 Series | EXOS 31.6          |
|  | 5720 Series | Not supported      |
|  | 7520 Series | Switch Engine 32.5 |
|  | 7720 Series | Switch Engine 32.5 |
| RFC 3813 MPLS Label Switching Router (LSR) MIB   | 5320 Series | Not supported      |
|  | 5420 Series | Not supported      |
|  | 5520 Series | EXOS 31.6          |
|  | 5720 Series | Not supported      |
|  | 7520 Series | Switch Engine 32.5 |
|  | 7720 Series | Switch Engine 32.5 |
| RFC 3815 Definition of Managed Objects for the MPLS, Label Distribution Protocol (LDP) | 5320 Series | Not supported      |
|  | 5420 Series | Not supported      |
|  | 5520 Series | EXOS 31.6          |
|  | 5720 Series | Not supported      |
|  | 7520 Series | Switch Engine 32.5 |
|  | 7720 Series | Switch Engine 32.5 |

**Table 41: MultiProtocol Label Switching (MPLS) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 4379 Detecting MPLS (MPLS) Data Plane Failures (LSP Ping)               | 5320 Series | Not supported      |
|   | 5420 Series | Not supported      |
|   | 5520 Series | EXOS 31.6          |
|   | 5720 Series | Not supported      |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |
| RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |

**Table 42: Multicast Listener Discovery (MLD)**

| Feature                       | Product     | Release introduced |
|-------------------------------|-------------|--------------------|
| MLD                           | 5320 Series | Switch Engine 31.6 |
|                               | 5420 Series | EXOS 31.3          |
|                               | 5520 Series | EXOS 31.1          |
|                               | 5720 Series | Switch Engine 32.1 |
|                               | 7520 Series | Switch Engine 32.4 |
|                               | 7720 Series | Switch Engine 32.4 |
| MLD Snooping                  | 5320 Series | Switch Engine 31.6 |
|                               | 5420 Series | EXOS 31.3          |
|                               | 5520 Series | EXOS 31.1          |
|                               | 5720 Series | Switch Engine 32.1 |
|                               | 7520 Series | Switch Engine 32.4 |
|                               | 7720 Series | Switch Engine 32.4 |
| RFC 2710, IPv6 MLDv1 Protocol | 5320 Series | Switch Engine 31.6 |
|                               | 5420 Series | EXOS 31.3          |
|                               | 5520 Series | EXOS 31.1          |
|                               | 5720 Series | Switch Engine 32.1 |
|                               | 7520 Series | Switch Engine 32.4 |
|                               | 7720 Series | Switch Engine 32.4 |

**Table 42: Multicast Listener Discovery (MLD) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 3810, IPv6 MLDv2 Protocol  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 4541, Considerations for Internet Group Management Protocol (IGMP) and MLD Snooping Switches | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 43: Multicast Source Discovery Protocol (MSDP)**

| Feature       | Product     | Release introduced |
|---------------|-------------|--------------------|
| RFC 3618 MSDP | 5320 Series | Switch Engine 31.6 |
|               | 5420 Series | EXOS 31.3          |
|               | 5520 Series | EXOS 31.1          |
|               | 5720 Series | Switch Engine 32.1 |
|               | 7520 Series | Switch Engine 32.4 |
|               | 7720 Series | Switch Engine 32.4 |

**Table 44: Multiple Spanning Tree Protocol (MSTP)**

| Feature                                   | Product     | Release introduced |
|---|-------------|--------------------|
| IEEE 802.1Q – 2003 (formerly IEEE 802.1s) | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |

**Table 44: Multiple Spanning Tree Protocol (MSTP) (continued)**

| Feature                         | Product     | Release introduced |
|---------------------------------|-------------|--------------------|
| Multiple Instances of STP, MSTP | 5720 Series | Switch Engine 32.1 |
|                                 | 7520 Series | Switch Engine 32.4 |
|                                 | 7720 Series | Switch Engine 32.4 |

**Table 45: Multiple CLI Users**

| Feature                     | Product     | Release introduced |
|-----------------------------|-------------|--------------------|
| Multiple CLI users per role | 5320 Series | Switch Engine 31.6 |
|                             | 5420 Series | EXOS 31.3          |
|                             | 5520 Series | EXOS 31.1          |
|                             | 5720 Series | Switch Engine 32.1 |
|                             | 7520 Series | Switch Engine 32.4 |
|                             | 7720 Series | Switch Engine 32.4 |

**Table 46: Network Login**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IEEE 802.1x – 2004 Port-Based Network Access Control for Network Login | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Multiple supplicants with multiple VLANs for Network Login (all modes) | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Network Login – 802.1x, Web and MAC-based mechanisms                   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 46: Network Login (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 1866 HTML – used for Web-based Network Login and ExtremeXOS Chalet     | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| SSL/TLS transport – used for Web-based Network Login and ExtremeXOS Chalet | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 47: Network operating system personality**

| Feature                 | Product     | Release introduced |
|-------------------------|-------------|--------------------|
| Dual-boot personalities | 5320 Series | Switch Engine 31.6 |
|                         | 5420 Series | EXOS 31.3          |
|                         | 5520 Series | EXOS 31.1          |
|                         | 5720 Series | Switch Engine 32.1 |
|                         | 7720 Series | Switch Engine 32.4 |
|                         | 7520 Series | Switch Engine 32.4 |

**Table 48: Network Time Protocol (NTP)**

| Feature               | Product     | Release introduced |
|-----------------------|-------------|--------------------|
| NTPv4 client for IPv4 | 5320 Series | Switch Engine 31.6 |
|                       | 5420 Series | EXOS 31.3          |
|                       | 5520 Series | EXOS 31.1          |
|                       | 5720 Series | Switch Engine 32.1 |
|                       | 7520 Series | Switch Engine 32.4 |
|                       | 7720 Series | Switch Engine 32.4 |



**Table 48: Network Time Protocol (NTP) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| NTPv4 client for IPv6   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| NTPv4 master and restrict   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| NTP Authentication Key Obfuscation                                | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| NTP Server configuration using fully qualified domain name (FQDN) | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 5905 1 – NTP Version 4: Protocol and Algorithms Specification | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 49: ONEPolicy**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 49: ONEPolicy (continued)**

| Feature           | Product     | Release introduced |
|-------------------|-------------|--------------------|
| ONEPolicy         | 5420 Series | EXOS 31.3          |
|                   | 5520 Series | EXOS 31.1          |
|                   | 5720 Series | Switch Engine 32.1 |
|                   | 7520 Series | Switch Engine 32.4 |
|                   | 7720 Series | Switch Engine 32.4 |
| Role Based Policy | 5320 Series | Switch Engine 31.6 |
|                   | 5420 Series | EXOS 31.3          |
|                   | 5520 Series | EXOS 31.1          |
|                   | 5720 Series | Switch Engine 32.1 |
|                   | 7520 Series | Switch Engine 32.4 |
|                   | 7720 Series | Switch Engine 32.4 |

**Table 50: OpenFlow**

| Feature  | Product     | Release introduced |
|----------|-------------|--------------------|
| OpenFlow | 5320 Series | Switch Engine 31.6 |
|          | 5420 Series | EXOS 31.3          |
|          | 5520 Series | EXOS 31.1          |
|          | 5720 Series | Switch Engine 32.1 |
|          | 7520 Series | Switch Engine 32.4 |
|          | 7720 Series | Switch Engine 32.4 |

**Table 51: Open vSwitch Database (OVSDB)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| OVSDB   | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 52: Open Shortest Path First (OSPF)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 52: Open Shortest Path First (OSPF) (continued)**

| Feature                      | Product     | Release introduced |
|------------------------------|-------------|--------------------|
| OSPF                         | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |
| OSPF ECMP                    | 5320 Series | Switch Engine 31.6 |
|                              | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |
| OSPF MD5 Authentication      | 5320 Series | Switch Engine 31.6 |
|                              | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |
| RFC 1850 OSPFv2 MIB          | 5320 Series | Switch Engine 31.6 |
|                              | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |
| RFC 2328 OSPF v2 (Edge-mode) | 5320 Series | Switch Engine 31.6 |
|                              | 5420 Series | EXOS 31.3          |
|                              | 5520 Series | EXOS 31.1          |
|                              | 5720 Series | Switch Engine 32.1 |
|                              | 7520 Series | Switch Engine 32.4 |
|                              | 7720 Series | Switch Engine 32.4 |

**Table 52: Open Shortest Path First (OSPF) (continued)**

| Feature                                   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 1587 OSPF NSSA Option                 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 1765 OSPF Database Overflow           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2370 OSPF Opaque LSA Option           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 3623 OSPF Graceful Restart            | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Secure hash algorithm 1 (SHA-1) and SHA-2 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 53: Open Shortest Path First version 3 (OSPFv3)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 53: Open Shortest Path First version 3 (OSPFv3) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| OSPFv3   | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 4552 Authentication/<br>Confidentiality for OSPFv3 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
| RFC 5187 OSPFv3 Graceful<br>Restart                    | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
| RFC 5340 OSPF for IPv6<br>(OSPFv3)(edited)             | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |



## Features P to R

**Table 54: Port Mirroring**

| Feature                                 | Product     | Release introduced |
|---|-------------|--------------------|
| Egress mirroring (port-based)           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Ingress mirroring (port and flow-based) | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 55: Power over Ethernet (PoE)**

| Feature  | Product     | Release introduced  |
|----------|-------------|---|
| Fast PoE | 5320 Series | EXOS 31.6<br>5320-24P-8XE,<br>5320-48P-8XE,<br>5320-16P-4XE, and<br>5320-16P-4XE-DC.  |
|          | 5420 Series | EXOS 31.3<br>5420F-24P-4XE,<br>5420F-48P-4XE<br>5420F-8W-16P-4XE, ,<br>5420F-16W-32P-4XE,<br>5420F-16MW-32P-4XE ,<br>5420F-48P-4XL,<br>5420M-24W-4YE,<br>5420M-48W-4YE, and<br>5420M-16MW-32P-4YE |
|          | 5520 Series | EXOS 31.1   |

**Table 55: Power over Ethernet (PoE) (continued)**

| Feature | Product     | Release introduced  |
|---------|-------------|---|
|         |             | 5520-12MW-36W, 5520-24W and 5520-48W only   |
|         | 5720 Series | Switch Engine 32.1<br>5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW  |
|         | 7520 Series | Not Applicable  |
|         | 7720 Series | Not Applicable  |
| PoE     | 5320 Series | EXOS 31.6<br>5320-24P-8XE, 5320-48P-8XE, 5320-16P-4XE, and 5320-16P-4XE-DC.   |
|         | 5420 Series | EXOS 31.3<br>5420F-24P-4XE, 5420F-48P-4XE, 5420F-48P-4XL, 5420F-8W-16P-4XE, 5420F-16W-32P-4XE, 5420F-16MW-32P-4XE, 5420M-24W-4YE, 5420M-48W-4YE, and 5420M-16MW-32P-4YE |
|         | 5520 Series | EXOS 31.1<br>5520-12MW-36W, 5520-24W and 5520-48W only  |
|         | 5720 Series | Switch Engine 32.1<br>5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW  |
|         | 7520 Series | Not Applicable  |
|         | 7720 Series | Not Applicable  |

**Table 55: Power over Ethernet (PoE) (continued)**

| Feature                        | Product     | Release introduced  |
|--------------------------------|-------------|---|
| PoE/PoE+ allocation using LLDP | 5320 Series | EXOS 31.6<br>5320-24P-8XE,<br>5320-48P-8XE,<br>5320-16P-4XE, and<br>5320-16P-4XE-DC.  |
|                                | 5420 Series | EXOS 31.3<br>5420F-24P-4XE,<br>5420F-48P-4XE<br>5420F-8W-16P-4XE, ,<br>5420F-16W-32P-4XE,<br>5420F-16MW-32P-4XE ,<br>5420F-48P-4XL,<br>5420M-24W-4YE,<br>5420M-48W-4YE, and<br>5420M-16MW-32P-4YE |
|                                | 5520 Series | EXOS 31.1<br>5520-12MW-36W, 5520-24W<br>and 5520-48W only   |
|                                | 5720 Series | Switch Engine 32.1<br>5720-24MW, 5720-48MW,<br>5720-24MXW, and<br>5720-48MXW  |
|                                | 7520 Series | Not Applicable  |
|                                | 7720 Series | Not Applicable  |



**Table 55: Power over Ethernet (PoE) (continued)**

| Feature       | Product     | Release introduced  |
|---------------|-------------|---|
| Perpetual PoE | 5320 Series | EXOS 31.6<br>5320-24P-8XE,<br>5320-48P-8XE,<br>5320-16P-4XE, and<br>5320-16P-4XE-DC.  |
|               | 5420 Series | EXOS 31.3<br>5420F-24P-4XE,<br>5420F-48P-4XE<br>5420F-8W-16P-4XE, ,<br>5420F-16W-32P-4XE,<br>5420F-16MW-32P-4XE ,<br>5420F-48P-4XL,<br>5420M-24W-4YE,<br>5420M-48W-4YE, and<br>5420M-16MW-32P-4YE |
|               | 5520 Series | EXOS 31.1<br>5520-12MW-36W, 5520-24W<br>and 5520-48W only   |
|               | 5720 Series | Switch Engine 32.1<br>5720-24MW, 5720-48MW,<br>5720-24MXW, and<br>5720-48MXW  |
|               | 7520 Series | Not Applicable  |
|               | 7720 Series | Not Applicable  |

**Table 55: Power over Ethernet (PoE) (continued)**

| Feature                              | Product     | Release introduced  |
|--------------------------------------|-------------|---|
| RFC 3621 PoE-MIB (PoE switches only) | 5320 Series | EXOS 31.6<br>5320-24P-8XE,<br>5320-48P-8XE,<br>5320-16P-4XE, and<br>5320-16P-4XE-DC.  |
|                                      | 5420 Series | EXOS 31.3<br>5420F-24P-4XE,<br>5420F-48P-4XE<br>5420F-8W-16P-4XE, ,<br>5420F-16W-32P-4XE,<br>5420F-16MW-32P-4XE ,<br>5420F-48P-4XL,<br>5420M-24W-4YE,<br>5420M-48W-4YE, and<br>5420M-16MW-32P-4YE |
|                                      | 5520 Series | EXOS 31.1<br>5520-12MW-36W, 5520-24W<br>and 5520-48W only   |
|                                      | 5720 Series | Switch Engine 32.1<br>5720-24MW, 5720-48MW,<br>5720-24MXW, and<br>5720-48MXW  |
|                                      | 7520 Series | Not Applicable  |
|                                      | 7720 Series | Not Applicable  |

**Table 56: Precision Time Protocol v2 (PTPv2)**

| Feature           | Product     | Release introduced |
|-------------------|-------------|--------------------|
| Transparent Clock | 5320 Series | Not supported      |
|                   | 5420 Series | Not supported      |
|                   | 5520 Series | EXOS 32.6.1        |
|                   | 5720 Series | Not supported      |
|                   | 7520 Series | Not supported      |
|                   | 7720 Series | Not supported      |

**Table 57: Priority Flow Control**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 57: Priority Flow Control (continued)**

| Feature                               | Product     | Release introduced |
|---------------------------------------|-------------|--------------------|
| Priority Flow Control (IEEE 802.1Qbb) | 5420 Series | EXOS 31.3          |
|                                       | 5520 Series | EXOS 31.1          |
|                                       | 5720 Series | Switch Engine 32.1 |
|                                       | 7520 Series | Switch Engine 32.4 |
|                                       | 7720 Series | Switch Engine 32.4 |

**Table 58: Protocol Independent Multicast (PIM)**

| Feature                                     | Product            | Release introduced |
|---|--------------------|--------------------|
| PIM ECMP Load Splitting                     | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
|   | 7720 Series        | Switch Engine 32.4 |
| PIM over IPv6                               | Switch Engine 31.6 | Switch Engine 31.6 |
|   | EXOS 31.3          | EXOS 31.3          |
|   | EXOS 31.1          | EXOS 31.1          |
|   | Switch Engine 32.1 | Switch Engine 32.1 |
|   | Switch Engine 32.4 | Switch Engine 32.4 |
|   | Switch Engine 32.4 | Switch Engine 32.4 |
| PIM Snooping                                | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
|   | 7720 Series        | Switch Engine 32.4 |
| RFC 2934 Protocol Independent Multicast MIB | 5320 Series        | Switch Engine 31.6 |
|   | 5420 Series        | EXOS 31.3          |
|   | 5520 Series        | EXOS 31.1          |
|   | 5720 Series        | Switch Engine 32.1 |
|   | 7520 Series        | Switch Engine 32.4 |
|   | 7720 Series        | Switch Engine 32.4 |

**Table 58: Protocol Independent Multicast (PIM) (continued)**

| Feature                                | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 3446 Anycast RP using PIM and MSDP | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 59: Protocol Independent Multicast-Source Specific Mode (PIM-SSM)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| draft-ietf-pim-mib-v2-01.txt  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| PIM-SSM for IPv4  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| PIM-DM Draft IETF PIM Dense Mode draft-ietf-idmr-pim-dm-05.txt, draft-ietf-pim-dm-new-v2-04.txt | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 7520 Series | Switch Engine 32.1 |
|   | 7720 Series | Switch Engine 32.4 |
|   | 5720 Series | Switch Engine 32.4 |

**Table 59: Protocol Independent Multicast-Source Specific Mode (PIM-SSM)  
(continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 3569, draft-ietf-ssm-arch-06.txt PIM-SSM PIM Source Specific Multicast | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 60: Protocol Independent Multicast - Sparse Mode (PIM-SM)**

| Feature                                  | Product     | Release introduced |
|--|-------------|--------------------|
| PIM Infinite Threshold for IPv4 and IPv6 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| PIM-SM for IPv4                          | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2362 PIM-SM (Edge-mode)              | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 61: Pseudowire**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Not applicable     |

**Table 61: Pseudowire (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Pseudowire LSP Loadsharing  | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |
| RFC 4447 Pseudowire Setup and Maintenance using the Label Distribution Protocol (LDP) | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
| RFC 5085 Pseudowire Virtual Circuit Connectivity Verification (VCCV)                  | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
| RFC 5542 Definitions of Textual Conventions for Pseudowire (PW) Management            | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
| RFC 5602 Pseudowire over MPLS PSN MIB   | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |

**Table 61: Pseudowire (continued)**

| Feature                          | Product     | Release introduced |
|----------------------------------|-------------|--------------------|
| RFC 5603 Ethernet Pseudowire MIB | 5320 Series | Not applicable     |
|                                  | 5420 Series | Not applicable     |
|                                  | 5520 Series | EXOS 31.1          |
|                                  | 5720 Series | Not applicable     |
|                                  | 7520 Series | Switch Engine 32.5 |
|                                  | 7720 Series | Switch Engine 32.5 |

**Table 62: Quality of Service (QoS) and Voice-over-IP (VoIP)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Automatic QoS   | 5320 Series | Not Supported      |
|   | 5420 Series | Not Supported      |
|   | 5520 Series | Not Supported      |
|   | 5720 Series | Not Supported      |
|   | 7520 Series | Not Supported      |
|   | 7720 Series | Not Supported      |
| IEEE 802.1D – 1998 (802.1p) Packet Priority           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2474 DiffServ Precedence, including 8 queues/port | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2598 DiffServ Expedited Forwarding (EF)           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 62: Quality of Service (QoS) and Voice-over-IP (VoIP) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 2597 DiffServ Assured Forwarding (AF)        | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2475 DiffServ Core and Edge Router Functions | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Weighted Random Early Detection (WRED)           | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 63: Queue Profiles**

| Feature                     | Product     | Release introduced |
|-----------------------------|-------------|--------------------|
| QoS per queue rate limiting | 5320 Series | Switch Engine 31.6 |
|                             | 5420 Series | EXOS 31.3          |
|                             | 5520 Series | EXOS 31.1          |
|                             | 5720 Series | Switch Engine 32.1 |
|                             | 7520 Series | Switch Engine 32.4 |
|                             | 7720 Series | Switch Engine 32.4 |

**Table 64: RADIUS**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |



**Table 64: RADIUS (continued)**

| Feature                              | Product     | Release introduced |
|--------------------------------------|-------------|--------------------|
| RADIUS (IPv6)                        | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |
| RADIUS, community-based users (IPv4) | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
| RADIUS over TLS                      | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
| RADIUS Security (RADSec)             | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
| RFC 2865 RADIUS Authentication       | 5320 Series | Switch Engine 31.6 |
|                                      | 5420 Series | EXOS 31.3          |
|                                      | 5520 Series | EXOS 31.1          |
|                                      | 5720 Series | Switch Engine 32.1 |
|                                      | 7520 Series | Switch Engine 32.4 |
|                                      | 7720 Series | Switch Engine 32.4 |

**Table 64: RADIUS (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 2866 RADIUS Accounting   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 3579 RADIUS EAP support for 802.1x   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 3580 IEEE 802.1x RADIUS Guidelines, Dynamic VLAN assignment via RADIUS tunnel attributes | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RADIUS Per-command Authentication  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RADIUS Server Load Balancing   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 64: RADIUS (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 4668 RADIUS Authentication Client MIB for IPv6 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 4670 RADIUS Accounting Client MIB for IPv6     | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 65: Representational State Transfer Configuration Protocol (RESTCONF)**

| Feature  | Product            | Release introduced |
|----------|--------------------|--------------------|
| RESTCONF | Switch Engine 31.6 | Switch Engine 31.6 |
|          | EXOS 31.3          | EXOS 31.3          |
|          | EXOS 31.1          | EXOS 31.1          |
|          | Switch Engine 32.1 | Switch Engine 32.1 |
|          | Switch Engine 32.4 | Switch Engine 32.4 |
|          | Switch Engine 32.4 | Switch Engine 32.4 |

**Table 66: Routing Information Protocol (RIP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| RIP     | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |

**Table 66: Routing Information Protocol (RIP) (continued)**

| Feature            | Product            | Release introduced |
|--------------------|--------------------|--------------------|
| RIPng              | Switch Engine 31.6 | Switch Engine 31.6 |
|                    | EXOS 31.3          | EXOS 31.3          |
|                    | EXOS 31.1          | EXOS 31.1          |
|                    | Switch Engine 32.1 | Switch Engine 32.1 |
|                    | Switch Engine 32.4 | Switch Engine 32.4 |
|                    | Switch Engine 32.4 | Switch Engine 32.4 |
| RFC 1058 RIP v1    | 5320 Series        | Switch Engine 31.6 |
|                    | 5420 Series        | EXOS 31.3          |
|                    | 5520 Series        | EXOS 31.1          |
|                    | 5720 Series        | Switch Engine 32.1 |
|                    | 7520 Series        | Switch Engine 32.4 |
|                    | 7720 Series        | Switch Engine 32.4 |
| RFC 1724 RIPv2 MIB | 5320 Series        | Switch Engine 31.6 |
|                    | 5420 Series        | EXOS 31.3          |
|                    | 5520 Series        | EXOS 31.1          |
|                    | 5720 Series        | Switch Engine 32.1 |
|                    | 7520 Series        | Switch Engine 32.4 |
|                    | 7720 Series        | Switch Engine 32.4 |
| RFC 2453 RIP v2    | 5320 Series        | Switch Engine 31.6 |
|                    | 5420 Series        | EXOS 31.3          |
|                    | 5520 Series        | EXOS 31.1          |
|                    | 5720 Series        | Switch Engine 32.1 |
|                    | 7520 Series        | Switch Engine 32.4 |
|                    | 7720 Series        | Switch Engine 32.4 |



## Features S to U

**Table 67: Secure Shell (SSH)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| SSH-2 client and server   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Secure Copy (SCP-2) client and server   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| SSH-2, Secure Copy (SCP-2), and SFTP client/server with encryption/authentication | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 67: Secure Shell (SSH) (continued)**

| Feature                                | Product     | Release introduced |
|--|-------------|--------------------|
| Access Policies for Telnet/SSH-2/SCP-2 | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 68: Security, switch, and network protection**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Secure Shell (SSH-2), Secure Copy (SCP-2), and SFTP client/server with encryption/authentication | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Access Profiles on All Routing Protocols   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Access Policies for Telnet/SSH-2/SCP-2   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Fallback to local authentication database (MAC and Web-based methods)                            | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 68: Security, switch, and network protection (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Guest VLAN for 802.1x   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| RFC 2267 Network Ingress Filtering                              | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| IP Broadcast Forwarding Control                                 | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| SYN attack protection   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| CPU DoS Protection with traffic rate-limiting to management CPU | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 68: Security, switch, and network protection (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IEEE 802.1Q – 1998<br>Virtual Bridged Local Area<br>Networks             | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Software Redundant Ports   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1ag L2 Ping and<br>traceroute, Connectivity<br>Fault Management | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| ITU-T Y.1731 Frame Delay   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| ITU-T Y.1731 Frame Loss  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |



**Table 68: Security, switch, and network protection (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IEEE 802.3ah Ethernet OAM – Unidirectional Link Fault Management | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| ITU G.8032 Ethernet Ring Protection Switching                    | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 69: Security, router protection**

| Feature                             | Product     | Release introduced |
|-------------------------------------|-------------|--------------------|
| Routing protocol MD5 authentication | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |
| Identity Manager                    | 5320 Series | Switch Engine 31.6 |
|                                     | 5420 Series | EXOS 31.3          |
|                                     | 5520 Series | EXOS 31.1          |
|                                     | 5720 Series | Switch Engine 32.1 |
|                                     | 7520 Series | Switch Engine 32.4 |
|                                     | 7720 Series | Switch Engine 32.4 |

**Table 70: Simple Network Management Protocol (SNMP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |

**Table 70: Simple Network Management Protocol (SNMP) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| MEF-36 Y.1731 Compliant Performance Monitoring SNMP MIB  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1157 SNMPv1  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1650 Ethernet-Like MIB (update of RFC 1213 for SNMPv2)   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 1901 to – 1908 SNMPv2c, SMIv2 and Revised MIB-II   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2418 – Management Information Base for SNMP  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 2576 Coexistence between SNMP Version 1, Version 2 and Version 3 of the Internet standard Network Management Framework | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 70: Simple Network Management Protocol (SNMP) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| RFC 3410 – 3415<br>SNMPv3, user based<br>security, encryption and<br>authentication                                  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 3416 – Protocol<br>Operations for Version 2 of<br>SNMP   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| RFC 3826 – The Advanced<br>Encryption Standard (AES)<br>Cipher Algorithm in the<br>SNMP User-based Security<br>Model | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| SNMPv3 user based<br>security, with encryption/<br>authentication  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 71: Simple Network Time Protocol (SNTP)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |

**Table 71: Simple Network Time Protocol (SNTP) (continued)**

| Feature          | Product     | Release introduced |
|------------------|-------------|--------------------|
| RFC 2030 SNTP v4 | 5420 Series | EXOS 31.3          |
|                  | 5520 Series | EXOS 31.1          |
|                  | 5720 Series | Switch Engine 32.1 |
|                  | 7520 Series | Switch Engine 32.4 |
|                  | 7720 Series | Switch Engine 32.4 |

**Table 72: Spanning Tree Protocol (STP)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| Draft-ietf-bridge-rstpmib-03.txt – Definitions of Managed Objects for Bridges with Rapid STP | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1D – 1998 STP   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1D – 2004 (STP and RSTP)  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1w – 2001 Rapid Reconfiguration for STP, RSTP                                       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 72: Spanning Tree Protocol (STP) (continued)**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IEEE 802.1Q – 2003<br>(formerly IEEE 802.1s)<br>Multiple Instances of STP,<br>MSTP | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| EMISTP, Extreme Multiple<br>Instances of STP                                       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| PVST+, Per VLAN STP<br>(802.1Q interoperable)                                      | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 73: Stacking**

| Feature                 | Product     | Release introduced |
|-------------------------|-------------|--------------------|
| Stacking auto-discovery | 5320 Series | Not supported      |
|                         | 5420 Series | EXOS 31.5          |
|                         | 5520 Series | EXOS 31.5          |
|                         | 5720 Series | Not supported      |
|                         | 7520 Series | Not supported      |
|                         | 7720 Series | Not supported      |

**Table 73: Stacking (continued)**

| Feature          | Product     | Release introduced   |
|------------------|-------------|--|
| SummitStack-V    | 5320 Series | Not supported  |
|                  | 5420 Series | Not supported  |
|                  | 5520 Series | Switch Engine 31.6<br>Only on 5520-VIM-4X<br>allowing cross-stack to 5320<br>and 5420 SummitStack-<br>V40. |
|                  | 5720 Series | Not supported  |
|                  | 7520 Series | Not supported  |
|                  | 7720 Series | Not supported  |
| SummitStack-V40  | 5320 Series | Switch Engine 31.6   |
|                  | 5420 Series | EXOS 31.3  |
|                  | 5520 Series | Not supported  |
|                  | 5720 Series | Not supported  |
|                  | 7520 Series | Not supported  |
|                  | 7720 Series | Not supported  |
| SummitStack-V80  | 5320 Series | Not supported  |
|                  | 5420 Series | EXOS 31.4  |
|                  | 5520 Series | EXOS 31.5<br>Only when cross-stacking<br>with 5420.  |
|                  | 5720 Series | Not supported  |
|                  | 7520 Series | Not supported  |
|                  | 7720 Series | Not supported  |
| SummitStack-V160 | 5320 Series | Not supported  |
|                  | 5420 Series | Not supported  |
|                  | 5520 Series | EXOS 31.1  |
|                  | 5720 Series | Not supported  |
|                  | 7520 Series | Not supported  |
|                  | 7720 Series | Not supported  |

**Table 73: Stacking (continued)**

| Feature                                       | Product     | Release introduced  |
|---|-------------|---|
| SummitStack-V200                              | 5320 Series | Not supported   |
|   | 5420 Series | Not supported   |
|   | 5520 Series | EXOS 31.6   |
|   | 5720 Series | Switch Engine 32.1<br>Only when cross-stacking with 5520.               |
|   | 7520 Series | Not supported   |
|   | 7720 Series | Not supported   |
| SummitStack-V400                              | 5320 Series | Not supported   |
|   | 5420 Series | Not supported   |
|   | 5520 Series | Not supported   |
|   | 5720 Series | Switch Engine 32.2<br>Only with themselves.<br>No VIM ports.            |
|   | 7520 Series | Switch Engine 32.4<br>Only with themselves or cross-stacking with 7720. |
|   | 7720 Series | Switch Engine 32.4<br>Only with themselves or cross-stacking with 7520. |
| SummitStack-V400<br>Alternative Configuration | 5320 Series | Not supported   |
|   | 5420 Series | Not supported   |
|   | 5520 Series | Not supported   |
|   | 5720 Series | Switch Engine 32.1<br>Only with themselves.<br>No VIM ports.            |
|   | 7520 Series | Switch Engine 32.4<br>Only with themselves or cross-stacking with 7720. |
|   | 7720 Series | Switch Engine 32.4<br>Only with themselves or cross-stacking with 7520. |

**Table 74: Syslog**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 3164 BSD Syslog Protocol with Multiple Syslog Servers – 999 Local | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |

**Table 74: Syslog (continued)**

| Feature                                    | Product     | Release introduced |
|--|-------------|--------------------|
| Messages (criticals stored across reboots) | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Syslog                                     | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 75: Terminal Access Controller Access Control System (TACACS)**

| Feature          | Product     | Release introduced |
|------------------|-------------|--------------------|
| RFC 1492 TACACS+ | 5320 Series | Switch Engine 31.6 |
|                  | 5420 Series | EXOS 31.3          |
|                  | 5520 Series | EXOS 31.1          |
|                  | 5720 Series | Switch Engine 32.1 |
|                  | 7520 Series | Switch Engine 32.4 |
|                  | 7720 Series | Switch Engine 32.4 |





## Features V to X

**Table 76: Virtual LAN Services (VLAN) Services: VLANs, VMANs**

| Feature  | Product     | Release introduced |
|--|-------------|--------------------|
| IEEE 802.1ad Provider Bridge Network, virtual MANs (vMANs) | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1AK MVRP and MRP                                  | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1Q VLAN Tagging                                   | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| IEEE 802.1v: VLAN classification by Protocol and Port      | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 76: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)**

| Feature                                | Product     | Release introduced |
|--|-------------|--------------------|
| MAC-based VLANs                        | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Multiple STP domains per VLAN          | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Multicast Support for PVLAN            | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Multicast Support for VLAN Aggregation | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Port-based VLANs                       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 76: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Port-Specific VLAN tag                              | 5320 Series | Not supported      |
|   | 5420 Series | Not supported      |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Protocol-based VLANs                                | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| vMAN Ethertype Translation/Secondary vMAN Ethertype | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| vMAN Ethertype Translation/Secondary vMAN Ethertype | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| VLAN Aggregation                                    | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 76: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)**

| Feature       | Product     | Release introduced |
|---------------|-------------|--------------------|
| VLAN Bridging | 5320 Series | Switch Engine 31.6 |
|               | 5420 Series | EXOS 31.3          |
|               | 5520 Series | EXOS 31.1          |
|               | 5720 Series | Switch Engine 32.1 |
|               | 7520 Series | Switch Engine 32.4 |
|               | 7720 Series | Switch Engine 32.4 |

**Table 77: Virtual Router Redundancy Protocol (VRRP)**

| Feature           | Product     | Release introduced |
|-------------------|-------------|--------------------|
| IPv6 VRRP         | 5320 Series | Switch Engine 31.6 |
|                   | 5420 Series | EXOS 31.3          |
|                   | 5520 Series | EXOS 31.1          |
|                   | 5720 Series | Switch Engine 32.1 |
|                   | 7520 Series | Switch Engine 32.4 |
|                   | 7720 Series | Switch Engine 32.4 |
| RFC 2338 VRRP     | 5320 Series | Switch Engine 31.6 |
|                   | 5420 Series | EXOS 31.3          |
|                   | 5520 Series | EXOS 31.1          |
|                   | 5720 Series | Switch Engine 32.1 |
|                   | 7520 Series | Switch Engine 32.4 |
|                   | 7720 Series | Switch Engine 32.4 |
| RFC 2787 VRRP MIB | 5320 Series | Switch Engine 31.6 |
|                   | 5420 Series | EXOS 31.3          |
|                   | 5520 Series | EXOS 31.1          |
|                   | 5720 Series | Switch Engine 32.1 |
|                   | 7520 Series | Switch Engine 32.4 |
|                   | 7720 Series | Switch Engine 32.4 |
| RFC 3768 VRRPv2   | 5320 Series | Switch Engine 31.6 |
|                   | 5420 Series | EXOS 31.3          |
|                   | 5520 Series | EXOS 31.1          |
|                   | 5720 Series | Switch Engine 32.1 |
|                   | 7520 Series | Switch Engine 32.4 |
|                   | 7720 Series | Switch Engine 32.4 |

**Table 77: Virtual Router Redundancy Protocol (VRRP) (continued)**

| Feature         | Product     | Release introduced |
|-----------------|-------------|--------------------|
| VRRP            | 5320 Series | Switch Engine 31.6 |
|                 | 5420 Series | EXOS 31.3          |
|                 | 5520 Series | EXOS 31.1          |
|                 | 5720 Series | Switch Engine 32.1 |
|                 | 7520 Series | Switch Engine 32.4 |
|                 | 7720 Series | Switch Engine 32.4 |
| VRRPv3 for IPv4 | 5320 Series | Switch Engine 31.6 |
|                 | 5420 Series | EXOS 31.3          |
|                 | 5520 Series | EXOS 31.1          |
|                 | 5720 Series | Switch Engine 32.1 |
|                 | 7520 Series | Switch Engine 32.4 |
|                 | 7720 Series | Switch Engine 32.4 |
| VRRPv3 for IPv6 | 5320 Series | Switch Engine 31.6 |
|                 | 5420 Series | EXOS 31.3          |
|                 | 5520 Series | EXOS 31.1          |
|                 | 5720 Series | Switch Engine 32.1 |
|                 | 7520 Series | Switch Engine 32.4 |
|                 | 7720 Series | Switch Engine 32.4 |

**Table 78: Virtual Routing and Forwarding (VRF)**

| Feature  | Product     | Release introduced  |
|--|-------------|---|
| Virtualization with IPv4 VRF <ul style="list-style-type: none"> <li>• ARP</li> <li>• DHCP Relay</li> <li>• Inter-VRF Routing (static, dynamic, and policy)</li> <li>• Local routing</li> <li>• OSPFv2</li> <li>• RIPv1 and v2</li> <li>• Route policies</li> <li>• Static routing</li> <li>• VRRP</li> </ul> | 5320 Series | Switch Engine 31.6<br>Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration. |
|  | 5420 Series | EXOS 31.3   |
|  | 5520 Series | EXOS 31.1   |
|  | 5720 Series | Switch Engine 32.1  |
|  | 7520 Series | Switch Engine 32.4  |
|  | 7720 Series | Switch Engine 32.4  |

**Table 78: Virtual Routing and Forwarding (VRF) (continued)**

| Feature   | Product     | Release introduced  |
|---|-------------|---|
| IBGP over user-created VRFs   | 5320 Series | Switch Engine 31.6<br>Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration. |
|   | 5420 Series | EXOS 31.3   |
|   | 5520 Series | EXOS 31.1   |
|   | 5720 Series | Switch Engine 32.1  |
|   | 7520 Series | Switch Engine 32.4  |
|   | 7720 Series | Switch Engine 32.4  |
| IPv6 Virtualization for the following features and functions: <ul style="list-style-type: none"> <li>• IPv6 Interfaces and IPv6 Static Routes in VRFs and Layer 3 VSNs</li> <li>• ECMP and Alternative route</li> <li>• Route redistribution for static and direct routes</li> <li>• VRRPv3 for IPv6</li> <li>• DHCP Relay</li> <li>• IPv6 Reverse Path Forwarding</li> <li>• ICMP Ping and Traceroute</li> </ul> | 5320 Series | Switch Engine 31.6<br>Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration. |
|   | 5420 Series | EXOS 31.3   |
|   | 5520 Series | EXOS 31.1   |
|   | 5720 Series | Switch Engine 32.1  |
|   | 7520 Series | Switch Engine 32.4  |
|   | 7720 Series | Switch Engine 32.4  |
| IPv6 Virtualization for the following features and functions: <ul style="list-style-type: none"> <li>• Open Shortest Path First for IPv6 (OSPFv3)</li> <li>• IPv6 Border Gateway Protocol (IPv6 BGP)</li> <li>• IPv6 route redistribution enhancements</li> </ul>   | 5320 Series | Switch Engine 31.6<br>Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration. |
|   | 5420 Series | EXOS 31.3   |
|   | 5520 Series | EXOS 31.1   |
|   | 5720 Series | Switch Engine 32.1  |
|   | 7520 Series | Switch Engine 32.4  |
|   | 7720 Series | Switch Engine 32.4  |

**Table 79: Virtual eXtensible Local Area Network (VXLAN)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
|         | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |

**Table 79: Virtual eXtensible Local Area Network (VXLAN) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| Address Resolution Protocol (ARP) Learning over Tunnels | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Address Resolution Protocol (ARP) Suppression           | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Assisted Replication                                    | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Dynamic Virtual Networks                                | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Edge Automation   | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |
| Load Balancing  | 5320 Series | Switch Engine 31.6 |
|   | 5420 Series | EXOS 31.3          |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Switch Engine 32.1 |
|   | 7520 Series | Switch Engine 32.4 |
|   | 7720 Series | Switch Engine 32.4 |

**Table 79: Virtual eXtensible Local Area Network (VXLAN) (continued)**

| Feature  | Product     | Release introduced   |
|--|-------------|----------------------|
| Multiprotocol Border Gateway Protocol (MBGP) support for VXLAN | 5320 Series | Switch Engine 31.6   |
|  | 5420 Series | EXOS 31.3            |
|  | 5520 Series | EXOS 31.1            |
|  | 5720 Series | Switch Engine 32.1   |
|  | 7520 Series | Switch Engine 32.4   |
|  | 7720 Series | Switch Engine 32.4   |
| Policy and VXLAN   | 5320 Series | Switch Engine 31.6   |
|  | 5420 Series | EXOS 31.3            |
|  | 5520 Series | EXOS 31.1            |
|  | 5720 Series | Switch Engine 32.1   |
|  | 7520 Series | Switch Engine 32.4   |
|  | 7720 Series | Switch Engine 32.4   |
| Policy and VXLAN with static provisioning                      | 5320 Series | Switch Engine 32.6.1 |
|  | 5420 Series | Switch Engine 32.6.1 |
|  | 5520 Series | Switch Engine 32.6.1 |
|  | 5720 Series | Switch Engine 32.6.1 |
|  | 7520 Series | Switch Engine 32.6.1 |
|  | 7720 Series | Switch Engine 32.6.1 |
| OSPFv2 VXLAN Extensions  | 5320 Series | Switch Engine 31.6   |
|  | 5420 Series | EXOS 31.3            |
|  | 5520 Series | EXOS 31.1            |
|  | 5720 Series | Switch Engine 32.1   |
|  | 7520 Series | Switch Engine 32.4   |
|  | 7720 Series | Switch Engine 32.4   |
| Overlay Routing for VXLAN                                      | 5320 Series | Switch Engine 31.6   |
|  | 5420 Series | EXOS 31.3            |
|  | 5520 Series | EXOS 31.1            |
|  | 5720 Series | Switch Engine 32.1   |
|  | 7520 Series | Switch Engine 32.4   |
|  | 7720 Series | Switch Engine 32.4   |



**Table 79: Virtual eXtensible Local Area Network (VXLAN) (continued)**

| Feature                                  | Product     | Release introduced |
|--|-------------|--------------------|
| Quality of Service                       | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Redundant Access                         | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Underlay multicast<br>(multicast tunnel) | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Unicast and Multicast                    | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |
| Virtual Network Flood<br>Modes           | 5320 Series | Switch Engine 31.6 |
|  | 5420 Series | EXOS 31.3          |
|  | 5520 Series | EXOS 31.1          |
|  | 5720 Series | Switch Engine 32.1 |
|  | 7520 Series | Switch Engine 32.4 |
|  | 7720 Series | Switch Engine 32.4 |

**Table 79: Virtual eXtensible Local Area Network (VXLAN) (continued)**

| Feature                          | Product     | Release introduced |
|----------------------------------|-------------|--------------------|
| VXLAN + VMAN Customer Edge Ports | 5320 Series | Switch Engine 31.6 |
|                                  | 5420 Series | EXOS 31.3          |
|                                  | 5520 Series | EXOS 31.1          |
|                                  | 5720 Series | Switch Engine 32.1 |
|                                  | 7520 Series | Switch Engine 32.4 |
|                                  | 7720 Series | Switch Engine 32.4 |
| VXLAN Learning                   | 5320 Series | Switch Engine 31.6 |
|                                  | 5420 Series | EXOS 31.3          |
|                                  | 5520 Series | EXOS 31.1          |
|                                  | 5720 Series | Switch Engine 32.1 |
|                                  | 7520 Series | Switch Engine 32.4 |
|                                  | 7720 Series | Switch Engine 32.4 |

**Table 80: Virtual Private LAN Services (VPLS)**

| Feature                                   | Product     | Release introduced |
|---|-------------|--------------------|
| draft-ietf-l2vpn-vpls-mib-02.txt VPLS MIB | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |
| draft-ietf-l2vpn-vpls-mib-02.txt VPLS MIB | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |

**Table 80: Virtual Private LAN Services (VPLS) (continued)**

| Feature   | Product     | Release introduced |
|---|-------------|--------------------|
| RFC 4762 VPLS using Label Distribution Protocol (LDP) Signaling | 5320 Series | Not applicable     |
|   | 5420 Series | Not applicable     |
|   | 5520 Series | EXOS 31.1          |
|   | 5720 Series | Not applicable     |
|   | 7520 Series | Switch Engine 32.5 |
|   | 7720 Series | Switch Engine 32.5 |

**Table 81: ExtremeXOS Network Virtualization (XNV)**

| Feature | Product     | Release introduced |
|---------|-------------|--------------------|
| XNV     | 5320 Series | Switch Engine 31.6 |
|         | 5420 Series | EXOS 31.3          |
|         | 5520 Series | EXOS 31.1          |
|         | 5720 Series | Switch Engine 32.1 |
|         | 7520 Series | Switch Engine 32.4 |
|         | 7720 Series | Switch Engine 32.4 |



## Features Y and Z

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**Table 82: Zero Touch Deployment**

| Feature               | Product     | Release introduced |
|-----------------------|-------------|--------------------|
| Zero Touch Deployment | 5320 Series | Switch Engine 31.6 |
|                       | 5420 Series | EXOS 31.3          |
|                       | 5520 Series | EXOS 31.1          |
|                       | 5720 Series | Switch Engine 32.1 |
|                       | 7520 Series | Switch Engine 32.4 |
|                       | 7720 Series | Switch Engine 32.4 |

**Table 83: Zero Touch Fabric Configuration**

| Feature                         | Product     | Release introduced |
|---------------------------------|-------------|--------------------|
| Zero Touch Fabric Configuration | 5320 Series | Switch Engine 31.6 |
|                                 | 5420 Series | EXOS 31.3          |
|                                 | 5520 Series | EXOS 31.1          |
|                                 | 5720 Series | Switch Engine 32.1 |
|                                 | 7520 Series | Switch Engine 32.4 |
|                                 | 7720 Series | Switch Engine 32.4 |